

TUBERCULOSIS OF THE CÆCUM,

WITH A REPORT OF TWO CASES.

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FROM the pathologic view point tuberculosis of the cæcum may be divided into three forms as follows: (1) the ulcerating form; (2) the entero-peritoneal form, and (3) the hypertrophic form.

The ulcerating form represents the ordinary intestinal tuberculosis and, like all parts of the intestine, the cæcum may present ulcerations of a tuberculous nature. When arising from an intestinal tuberculosis, the ulcerations become localized more particularly in the terminal portion of the ileum, where they may remain without extending beyond the ileo-cæcal valve; but they may also invade the mucosa of the cæcum. In the large majority of cases tuberculous ulcerations are secondary and they undergo their evolution in patients presenting pulmonary lesions. They may occasionally be primary, but, under these circumstances, they are much more localized and, in one case reported by Jaboulay, the lesion was localized on the posterior aspect of the cæcum. The ulcerations appear more commonly in the closed follicles and Peyer's patches. In shape they may be either oval or circular, while their long axis is perpendicular with the axis of the intestine. Less frequently tuberculous ulcerations primarily arise in the cæcum and from there extend to the ileum, but however this may be, whether the localization is primary or secondary in the cæcum, these ulcerations never form stenoses sufficiently narrow to prevent the feces from passing. Fibrous tuberculosis giving rise to stenosis is frequently encountered in the small intestine, but is probably never met with in the large intestine, and the cæcum in particular.

Although it has been upheld that cicatrical tissue arising from tuberculosis and producing stenosis may possibly occur in

the cæcum we can hardly admit such a conclusion, because, in point of fact, the small gut is not comparable to the large intestine and what may happen in the former cannot occur in the latter. The calibre of the large intestine is notably greater than that of the small, so that cicatricial bands and annular stenoses which may, in the small intestine, arrest the progress of the feces cannot arise in the large intestine unless in the form of incomplete diaphragms incapable at any rate of being a serious obstacle to the onward passage of the feces.

The entero-peritoneal form of intestinal tuberculosis is represented by a complete involvement of the cæcum, the terminal portion of the ileum, with involvement of the mesentery and its lymphatic glands. The ulcerations of the mucosa extend in depth, burrowing through the intestinal layers and opening in the peritoneum, which structure itself is also involved in the process. Riddled with tuberculous granulations, it is covered with lymphnodes undergoing degeneration and the formation of multiple abscesses, while numerous strong adhesions are formed between the gut and the neighboring viscera. They frequently unite the cæcum to the posterior wall and the ureter and blood vessels are included in this tuberculous mass, so that, if an attempt is made to resect the neoplasm, there is considerable likelihood of injuring these organs, so that in one instance, Czerny wounded the ureter and was obliged to do a nephrectomy. The abscesses scattered throughout the large tumor formed by the intestine and the mesentery have a tendency to increase in size; they project and burrow towards the exterior and where this is going on the integuments become red and thin, so that finally the purulent pocket opens outwards by way of a more or less tortuous and fungous fistula. As has been pointed out the intestine itself communicates with the abscess from the progress of the ulcerated process so that a solution of continuity between the lumen of the gut and the skin takes place and a fecal fistula is thus created.

These fistulae usually open either in the anterior abdominal wall, at the umbilicus, the cæcal region, or, which is more fre-

quent, in the right iliac fossa, even in those cases where the cæcal region is invaded. Occasionally they may open into the intestine (colon or small intestine), thus creating spontaneous entero-anastomoses. Then, again, the orifice of the fistulæ may be at some distance from the lesion, such as in the lumbar region. And lastly, the suppurative process may become directed towards the pelvis, project into the vagina and thus simulate a pelvic collection.

The hypertrophic form of intestinal tuberculosis may truly be called the surgical type and, for this reason, more detail will here be given. Hypertrophic tuberculosis of the cæcum is usually primary, I might say always, if one were permitted an absolute affirmation in medicine. Primary tuberculoses are at the present time thoroughly demonstrated to exist, particularly for the bones and joints and the intestine may also be primarily attacked, the cæcum in particular. There is probably not a single operator who does not recall tuberculous lesions of the cæcum undergoing their evolution independently of any pulmonary lesion, with the general condition of the patient frequently intact, or only somewhat weakened from the fact of the intestinal lesion, which does not even appear to reach the peritoneum. After a radical, or merely a palliative operation, every trace of the process disappears and these patients become well without any pulmonary manifestations occurring, just as is the case of tuberculosis of the skeleton.

Hypertrophic tuberculosis of the cæcum is primary, and it may perhaps be said that, if in a patient tuberculous lesions of the lung are encountered at the same time as those of the cæcum, the *latter being of the hypertrophic form*, the lung involvement is the result and not the cause of the process in the intestine. In a case recorded by Caussade and Charrier, the patient presented in the beginning gastro-intestinal symptoms with a tumor in the right iliac fossa, without any stethoscopic evidence, but two years later he had beside the intestinal disturbances, pulmonary lesions. Consequently, in this case the cæcum was the primary point of infection. Clinically speaking, when a pulmonary phthisis gives rise to localizations in

the intestine, the result is an ulcerating process and not hypertrophic tuberculosis.

It is a fact that hypertrophic tuberculosis is rarely in the small intestine, its points of election being the cæcum, the angles of the colon and, lastly, the rectum.

Tuberculosis of the cæcum begins in the neighborhood of the ileo-cæcal valve. It was thought formerly that the terminal portion of the ileum was involved at the same time as the cæcum or before the latter, but, at the present time, this is no longer admitted. In the large majority of cases, hypertrophic tuberculosis commences in the cæcum, remains there and has no tendency to invade the ileum, and, although formerly many cases were published where the ileum was involved, it was because that, although the hypertrophic tuberculosis in the commencement remained limited to the cæcum, it in the course of time acquired a greater malignancy, so that to the hypertrophy of the walls of the gut ulcerations of the mucosa became added, and then only, the tuberculous process involved the ileo-cæcal valve and became propagated to the terminal portion of the ileum. Consequently, it is not the hypertrophic tuberculosis which becomes generalized to the ileum, but one is in reality dealing with a secondary tuberculous ulcerative process.

In many cases the mucosa of the hypertrophied cæcum has been found healthy, without ulcerations, while the ileum in no way participated in the process, its walls having retained their normal thickness. In other instances more or less extensive ulcerations in the cæcum have been noted, but the ileum has not as yet become invaded. And lastly, in other cases the ileum participated in the process and the mucosa of both the cæcum and ileum has been found covered with numerous, and occasionally very extensive, ulcerations.

Now, although the extension of the disease does not generally tend towards the ileum, the same cannot be said in the other sense, because hypertrophic tuberculosis may invade the ascending and the transverse colon and even extend still further. In one of Dieulafoy's cases the thickening extended to the hepatic flexure, while in a case recorded by Roux, he

was obliged to remove the cæcum, ascending colon and a portion of the transverse colon. In an autopsy reported by Pilliet and Hartmann, in a case of Bezançon and Lapointe, the entire large intestine, as far as the sigmoid flexure was involved in the hypertrophic process. To sum up, it may be said that hypertrophic tuberculosis of the cæcum takes a descending course, that is to say, towards the colon.

In some instances the neoplasm only occupies a portion of the cæcum. Two such cases have been recorded by Richelot, in one the tumor being situated on the posterior aspect of the cæcum and having the dimensions of a fifty cent piece, while in the second case it occupied the ileo-cæcal angle. Cases of this kind are rather the exception and massive hypertrophy of the cæcum is the rule. The tumor presents a bossed aspect, recalling that of carcinoma; it is hard and in size may vary from a tangerine orange to two fists. Far from producing tuberculous ulcerations of the gut or a thinning of its walls, as in other varieties of intestinal tuberculous ulcerations, this particular form is characterized by a marked thickening of the various layers and the formation of a sclerotic lipomatous mass around the cæcum, which is very resisting to the feel and easily brings to one's mind the idea of a malignant neoplasm.

This sclerotic lipomatous mass is exactly similar to that surrounding tuberculous kidneys or bladders and is the result of a defensive process for the limitation of the infection. It forms an integral part of the tumor and is even with difficulty separated from it, especially in certain portions and more particularly in the neighborhood of the ileo-cæcal valve, at which point there is a complete union between the intestinal layers and the pericecal lipomatous atmosphere. In the midst of this sclerotic lipomatous tissue will be found the hypertrophied cæcum. The hypertrophy is never the same at all parts and may even vary very greatly. All the layers of the cæcum are involved in the hypertrophic process, but most unequally and Dieulafoy has rightly said that: "all the layers are thickened, but the hypertrophy is more particularly marked in the subperitoneal cellulo-fibrous and in the submucous layers." For

convenience sake, and with all due correctness, it may be said that the submucous and subserous layers form more than four-fifths of the neoplasm.

As a consequence of the hypertrophy of the walls of the gut a stricture in the lumen of the cæcum may result. The calibre of this organ may be considerably diminished, the ileo-cæcal valve almost completely occluded, but in every case one is dealing with a neoplastic stenosis and not one of the cicatricial type. Occasionally one has observed an ampullar dilatation of the cæcum instead of a stricture of its lumen, which has caused Dieulafoy to say that there exists a concentric hypertrophy with stricture and an eccentric hypertrophy with dilatation of the cæcum.

Microscopically much of interest is to be found. The mucosa participates in the hypertrophy. No ulcerations may be present and this is particularly the case in the early part of the process. Later on, the submucous cheesy tubercles may open at the surface, destroying the mucosa in certain areas and thus give rise to ulcerations which, occasionally, may occupy the larger portion of the cavity of the cæcum. Beside these ulcerations verrucose or polypous projections will be found on the mucosa and opaque white points which are very distinct and represent the caseous foci developed in the dermis of the mucosa. These points may, of course, be wanting.

The submucous layer is the structure where the primary localization of hypertrophic tuberculosis takes place. The disease begins in the lymphoid organs, the follicles and Peyer's patches, because tuberculosis of the cæcum is above all a *lymphatic tuberculosis*. The thickened submucous layer microscopically shows an unequal portion of inflammatory and tuberculous elements. It is in the midst of a collection of small round embryonal cells, generally mononuclear and with a small amount of protoplasm, in other words, inflammatory cells, which, not infrequently, give rise to mistaken diagnosis of lympho-sarcoma, where are to be found the tuberculous follicles scattered here and there. The latter are in more or less

numbers, having either a tendency towards sclerosis or caseation, according to the evolution of the affection.

The muscular layer participates but little in the hypertrophy; it is infiltrated and its muscular fibres are dissociated by masses of inflammatory cells, but they are not increased in number.

The subserous layer is greatly hypertrophied and here again one meets with a very unequal mixture of tuberculous and inflammatory elements. The tuberculous follicles are generally larger than those met with in the neighborhood of the lymphatic organs. As in the submucosa, these follicles may take on a sclerous or caseous evolution according to the type of the affection, but, as in its commencement, hypertrophic tuberculosis is benign with a slow progression, a sclerous evolution is the more frequent.

To sum up one may define hypertrophic tuberculosis of the cæcum as: the result of a battle between the inflammatory and tuberculous elements and taking place in the structures of the cæcum particularly rich in lymphoid tissue.

The result of this battle is that in the commencement, and for a long time, the tuberculous lesions are few in number, and it may even happen that they completely disappear, in which case the inflammatory elements have conquered and choked the nascent tuberculosis so that microscopically nothing is seen in the tumor but inflammatory cells without any trace of tuberculous elements.

Hypertrophic tuberculosis does not merely remain localized in the walls of the intestine, because it involves the neighboring lymphnodes, particularly those of the ileo-cæcal angle. Occasionally this lymphatic tuberculosis may extend for some distance from the primary lesion and it has been known to reach the neighborhood of the diaphragm, or extend along the aorta up to the pancreas.

In the majority of cases the ileo-cæcal valve will be found hidden in a cicatricial mass, it being retracted, indurated, thickened and superficially involved in an ulcerative process with polypoid vegetations here and there. Its indurated orifice may

be considerably narrowed, while in other cases the orifice of the valve may be obstructed by the tuberculous neoplasm, this occurring in one of my cases, which may be summed up briefly as follows:

The examination of the cæcum after resection showed that in its interior there was an irregular tumor planted on the upper aspect of the ileocæcal valve, it having a cauliflower structure and its size being that of a small apple. It obstructed the lumen of the valve completely and macroscopically closely resembled a carcinoma. The terminal portion of the ileum was dilated and somewhat thickened by a submucous infiltration. For about five centimetres beyond the cæcum the colon was also thickened, although no lesion of its mucosa was observed. The peritoneum and appendix appeared healthy and there were only three small lymphatic glands in the mesentery. Microscopical examination of the cæcum with a high power showed that the process was tuberculous. The patient, a female, 87 years of age, was seen in consultation with Dr. Dalton, formerly of Cambridge, who gave me the following history. She had complained of pain in the right iliac region for about eighteen months. This was a painful sensation with periods of increase usually occurring a few hours after eating and by this became so marked that the patient restricted her diet. The stools were infrequent, requiring purgatives and the patient was rapidly losing flesh.

I saw the patient during an attack of colicky pain, so that we were obliged to resort to examination under an anæsthetic. The abdomen was not greatly distended and by bi-manual palpation nothing pathologic was found in either the uterus or its adnexa. However, at about the situation of McBurney's point, or a little higher, a hard, rounded tumor could be felt, which was fairly movable transversely. To the hand it felt about the size of a large orange and did not appear to be adherent either to the deeper structures, or to the abdominal wall. The other abdominal organs, as well as the thoracic viscera gave no evidence of any pathologic process. There was little or no elevation of temperature in the evening and the pulse, of good quality, was 88.

Given the patient's general condition and the history of the case, I was inclined to believe that one was dealing with a carcinoma of the cæcum and operation was advised. An incision in

the right semi-lunar line was made and exposed a greatly enlarged and indurated cæcum covered by an apparently intact peritoneum. On account of the extreme mobility of the neoplasm resection of the cæcum was undertaken, 8 centimetres of the ileum and 6 of the ascending colon being removed along with the cæcum. The ends of the large and small intestine were then closed by a through and through hemostatic suture of linen thread, this being buried by a superficial row of continuous Lembert's suture with fine chromic gut. After this, lateral anastomosis of the ileum with the ascending colon was easily accomplished. The patient made an uneventful recovery, having a natural motion two days after the operation and left the hospital on the 20th day in excellent condition. She was seen nineteen months after the operation, for the last time, when she was found to have considerably gained in weight and was in apparent good health.

As to the condition of the appendix found in tuberculosis of the cæcum it may be said that, as in the case of the ileum, it does not in the beginning participate in the process, but later on when the lesion has become extensive and ulceration has been added to the hypertrophic mass the appendix may in its turn become involved and form an integral part of the neoplasm. In certain cases it may be completely lost to view being imbedded in the sclerous pericæcal mass.

Referring now to the symptomatology it may be said that tuberculosis of the cæcum commences slowly, sometimes arising in an otherwise perfectly healthy patient, or on the contrary in one already predisposed by some local or general affection, such as gastro-enteritis, typhoid fever, dysentery, etc. It makes itself manifest in the first place by abdominal pain and intestinal disturbances. The latter consist in alternating diarrhoea and constipation, while the abdominal pain appears in the form of violent colics, localized in the region of the cæcum. The attacks of colic may be of very short duration, rarely extending over twenty-four hours, after which they subside, leaving some sensitiveness in the abdomen, which is particularly evident in the right iliac fossa.

Constipation may be the only symptom when the affection

results in a stricture of the ileo-caecal valve, or by obstruction of the latter by the tumor, as in the case above reported. Occasionally, the disease may commence suddenly with phenomena of circumscribed peritonitis.

After a few months, or a year or two, according to the rapidity of the evolution of the process, the lesions oblige the patient to seek surgical relief. If a suppurating perityphlitis has supervened one or several fistulae will be found in the region of the right groin. The pus may also burrow down towards the small pelvis and reach the ischio-rectal fossa and make its exit at the side of the anus.

By palpation a tumor in the right iliac fossa will usually be discovered. A hard, resisting mass, with an unequal surface, and having a cylindrical form, will be made out, although, in many reported cases, including my own, the growth was distinctly oval in shape. In size the neoplasm will vary from that of a walnut to an orange, or even more and if not adherent to the abdominal wall, the latter will remain smooth to the feel, while the growth will slide over the deep structures. When the tumor is adherent to the viscera contained in the iliac fossa its mobility will be more evident in a transversal direction. If there is only a tumefaction, simply giving the sensation of an indurated abdominal plaque, one would be more likely to suspect an aggravated form of appendicitis and here the diagnosis is frequently extremely difficult.

On percussion the neoplasm will usually present an area of dullness in its centre. If fistulous tracts are present, they should be prudently explored in order to ascertain their length and direction. The lymphnodes of the right inguinal region are sometimes enlarged and it is usually impossible to distinguish them apart from the tumor, or the mass formed by the enlarged glands of the iliac fossa which constitute an indurated mass which is lost in the depth of the lumbar region. One should carefully search for other localizations of tuberculosis, because these patients may already have slight lesions in the lungs or other viscera.

The functional symptoms are merely an exaggerated form

of those met with in the commencement of the disease; the pain becomes more persistent and the digestive disturbances more marked. If the process takes on an obstructive type with a rapid evolution the periods of constipation may be extremely prolonged and may last a week or more. The patient suffers in the right iliac fossa a few hours after eating, a symptom also very pathognomonic of carcinoma of the cæcum, as I pointed out several years ago in my paper on this affection, written in collaboration with Dr. Vander Veer.¹ One also meets with attacks of vomiting, the matter voided occasionally having a peculiar odor, although never fecaloid. This is due to the stagnation of the food in a dilated stomach, a condition not infrequently observed in patients afflicted with chronic affections of the cæcum. Indican may be present in the urine, as in all cases where fermentation is occurring in the intestine.

The general condition may remain very satisfactory for a considerable length of time, but finally loss of appetite and strength occur and the patient takes on a waxy look. There may or may not be a rise in temperature, but when this does occur it is apt to indicate a focus of tuberculosis in the lungs.

The hypertrophic type of tuberculosis of the cæcum affects the clinical aspects of a malignant neoplasm and, as I have already pointed out, it resembles closely carcinoma. The principal characters of this form are the development of a tumor in the right iliac fossa, whose increase in growth, ordinarily slow, but occasionally quite rapid, is accompanied by pain in the form of short, but very violent attacks of colic. It may also be characterized by evidences of intestinal occlusion, accompanied by vomiting, which, although of an alimentary nature may, as we have pointed out, have a peculiarly fetid odor. Complete intestinal occlusion has been met with, although very infrequently.

The ulcerating form simulates pure and simple inflammation of the cæcum and its appendix and usually no tumor is present, but a diffuse infiltration or a simple tumefaction may be made out. When the lesions extend to the appendix a small

¹ ANNALS OF SURGERY, January, 1902.

tumor may be discovered. The abdomen is distended while constipation and vomiting are not infrequent. In the more advanced phase chills and fever appear, indicating the formation of pus in the iliac fossa.

After a period of chronicity, interspersed with acute phenomena, which varies from months to years, the development of the lesions may cease by an appropriate medical treatment or else the symptoms may increase in intensity, the general nutrition becoming less and less, so that the patient dies from inanition as in any other tumor obstructing the intestine. Death may result from tuberculous peritonitis, while if the lungs become involved the patient dies from tuberculous cachexia.

Other serious complications bringing about a fatal outcome, such as perforation from ulceration of the intestines, or a fecal abscess arising in the cellular tissue of the iliac fossa are to be feared. If the affection evolutes towards a cure, a very serious stenosis may result like any following an ulcerating intestinal lesion from the resulting cicatrix. A right-sided pleurisy is frequently an excellent diagnostic indication, and I would also mention an instance of hydronephrosis resulting from compression of the ureter by the cæcal neoplasm.

In making a differential diagnosis one of three conditions may be present, namely, (1) there is a tumor; (2) there is no tumor, but a diffuse infiltration of the right iliac fossa is detected; (3) one or several fistulae are present in the right iliac fossa.

If the tumor is due to an accumulation of feces the galvanic current and purgation will settle the question, but, if after these means, the tumor is still felt, carcinoma of the cæcum is what usually first comes to one's mind. In both tuberculosis and carcinoma of the cæcum, especially when the former lesion is somewhat advanced, the patients present a waxy look, there is loss of flesh, while the shape of the growth, being often-times cylindrical and elongated in a vertical direction, adds greatly to the obscurity of the diagnosis, but what is still more perplexing is the prolonged constipation, an indication of chronic intestinal obstruction, involvement of the lymphatics

in the right groin and absence of a rise in temperature, and frequently, when the growth is examined after removal there is difficulty in coming to a correct differential diagnosis between tuberculosis and carcinoma.

As differential signs it may be mentioned that the hypertrophy is far more rapid in a case of carcinoma, likewise the secondary involvement of the mesenteric glands, while in tuberculosis the surface of the neoplasm is less bossed. Of course, these differences are in reality of very slight importance. At a more advanced phase the tumor softens, the skin becomes red and thin and adheres to the underlying structures. When the period of suppuration is reached, when by one or several fistulae pus is given exit, the bacteriological examination of the latter, with animal inoculation, allows one to come to a correct diagnosis, but which at this advanced stage of the process is of little use.

To sum up it may be said that the long duration of the disease, the greater frequency of spontaneous or provoked pain, the relatively young age of the patients, the presence of Koch's bacilli in the stools, will greatly aid in making the diagnosis of tuberculosis of the cæcum. On the other hand, intestinal lymphadenoma, chronic adenitis of the iliac glands, movable kidney and actynomycosis are more easy of differentiation. In the female, the diagnosis is rendered difficult between appendicitis or suppurating lesions of the adnexa, but from this short consideration of the symptomatology, is to be particularly pointed out the great difficulty of differential diagnosis between carcinoma and tuberculosis of the cæcum, and secondly, the occasional impossibility to precisely determine whether one is dealing with a tuberculosis of the cæcum involving the appendix or a simple chronic relapsing appendicitis.

When the tuberculous process is distinctly limited to a portion of the cæcum, a partial resection of the organ may be undertaken, upon the condition that the intestinal calibre will not suffer from removal of a portion of the organ. If the resection, to be of any curative value, must be extensive, so that a stricture of the gut might be the consequence, complete

removal of the ileo-cæcal segment should be undertaken. When the process has involved the precæcal glands, they should be removed, or if their extirpation is rendered impossible on account of extensive adhesions with the intestinal wall, they should be incised and curetted.

A tuberculosis of the ileo-cæcal region without tumor formation and giving rise to fistula requires the same treatment as tuberculosis with a neoplastic formation, viz., bilateral exclusion of the diseased segment. If a general peritonitis from perforation is present, laparotomy and search for the perforation may be attempted, but this is usually a very difficult undertaking.

As far as the results of exclusion of the intestine are concerned, it may be said that they are usually quite satisfactory. This interference has been resorted to in cases of cæcal tuberculosis without fistulæ. In Ullmann's case, after bilateral exclusion with an iliac anus from the colon, there was a considerable decrease in size of the growth, while in Frank's case, in which bilateral exclusion with suture of both the small and large gut to the skin, the tumor had entirely disappeared seven years after the operation. There was only a slight prolapsus of the mucosa of the colon with a trifling amount of mucous discharge, the opening of the ileum having become almost closed. In a case reported by Ewald and seen three years later, the opening into the small gut had entirely closed, while that of the colon presented a prolapse of the mucous membrane to a slight degree and only gave issue to a serous fluid requiring a new dressing once a fortnight. In other instances intestinal exclusion has, later on, allowed one to resect the diseased structures, which, at the time of the first interference, was considered impossible.

When fistulæ are present the ultimate results of exclusion have also been satisfactory. In Wiesinger's case, the result was a fistula which excreted a very small quantity of pus, while the neoplastic mass had decreased in size and there was a great improvement in the general condition of the patient. Albert's patient was seen three months after the operation, at which

time the pre-existing fistula was found to have closed; the growth was much smaller, and, since the operation the patient had increased ten pounds. A young boy operated on by Gnesca made weight rapidly after the operation, while the tumor diminished in size and became movable. In Friedländer's case the patient increased 14 lbs. in six weeks, while Ricard's patient increased 36 lbs. in three months after the operation, the growth was diminishing and the fistula only gave issue to a small amount of serous fluid. These few instances are sufficient to show the benefit which may be derived by exclusion of the ileo-cæcal segment, while the operative mortality is small, since, out of 30 cases, there were only two deaths directly due to the interference. However, it may be said that resection of the cæcum is decidedly indicated in tuberculosis of the cæcum when the latter represents the hypertrophic type and as soon as a diagnosis is made surgical interference is at once demanded. Resection is absolutely indicated when there is a tumor without abscess formation or fistula and, under these circumstances, it is a radical operation, because it removes the focus of tuberculosis from the body. If resection is found difficult or dangerous on account of extensive adhesions intestinal exclusion is then to be preferred.

Resection of the ileo-cæcal segment was easily carried out in my second case, the patient being a woman 27 years of age and married for five years, who was referred to me with a diagnosis of movable right kidney. She had had one child two years previously, the labor having been perfectly normal. For the past eight months the patient had suffered from dyspeptic phenomena and frequent attacks of colicky pain. There was alternating constipation and diarrhoea. For the past two months there was a dull and constant pain in the right iliac fossa. Three weeks before coming under my observation the patient developed what appeared to be an inflammatory attack in the region of the cæcum accompanied by a rise in temperature, tumefaction and constipation. The attending physician at this time diagnosed the case as one of appendicitis, but, as she rapidly recovered from the attack, and as afterwards he could distinctly make out a fairly movable

tumor about the size of the kidney in the iliac fossa, he revised his diagnosis and considered it to be a movable kidney, which had become adherent in that region.

The patient was pale and thin with the abdomen slightly distended. The constipation was still persistent, requiring an enema daily and from time to time she suffered from slight colic in the lower abdomen. A tumor the size of a mandarin orange could be felt distinctly in the right iliac fossa; it was movable, particularly transversely and slightly tender on pressure. Percussion did not reveal any dullness over its surface. A careful examination of the thoracic and abdominal viscera proved negative. The urine was normal.

Given the history of the case I was rather in favor of a diagnosis of tuberculosis of the cæcum, because, although the patient was quite thin, she did not present that characteristic aspect of cachexia, so often present in malignant disease of the gut. An operation was, therefore, advised.

An incision in the semi-lunar line exposed the peritoneal cavity and a few soft adhesions uniting the cæcum to the parietal peritoneum. These were broken down with ease and the cæcum was found fairly movable, so that it could be drawn out of the abdominal wound. It was greatly enlarged, the peritoneal surface somewhat injected, and by palpation its walls were found greatly thickened and at one point near the ileo-cæcal valve a tumor could be detected. Resection of the cæcum with three centimetres of the ileum and three of the colon was quickly accomplished and end to end anastomosis with linen thread was easily done. A small cigarette drain was inserted and abdominal walls closed by three layers of sutures. Recovery was uneventful, the patient having a spontaneous motion on the third day after the operation and she was able to return to her home in seventeen days. The drain was removed on the second day and the small opening left in the abdominal wall after its removal closed in a few days.

Examination of the cæcum after removal showed that all its walls were thickened and that in the region of the ileo-cæcal valve this thickening had attained the thickness of seven centimetres and which during the operation on palpation of the organ had given the impression of a neoplasm. A careful examination of the abdominal cavity did not reveal any enlarged lymphnodes

in the mesentery or elsewhere. Microscopical examination of the cæcum showed numerous giant cells in its walls and points of caseation, so that the anatomical diagnosis was tuberculosis of the cæcum.

If a patient should present a limited focus of tuberculosis in one lung I believe that this is not the contra-indication for radical interference on the cæcal lesion, because the latter is a serious hindrance to forced feeding and when the process is removed, there will probably be a return to the normal in the digestive functions, which can only have as a result a happy influence on the general condition, thus indirectly improving the lung lesion. Acute postoperative pulmonary lesions are infrequent, but, if an extensive pulmonary infiltration is present, accompanied by an evening rise in temperature, night sweats and a rapid loss of flesh, any operation on the intestine is contraindicated. This also applies when frequent and tenacious diarrhoea is present (indicating a diffusion of the lesions in the intestinal mucosa, while a marked albuminuria, indicating a tuberculous nephritis is also a contra-indication.